CONDENSER MICROPHONES KM 53 a and KM 54 a

M 861/99/500

APPLICATION

The condenser microphones KM 53a and KM 54a belong to a family of high quality miniature microphones which were developed to meet the special requirements of modern recording techniques. Their main features are their small dimensions and exceptional quality.

Both microphones are suitable for a vast number of applications in broadcasting, television, films and disc recording.

FEATURES

KM 53 a

The miniature microphone KM 53 a is a pressure transducer with a very fine metal diaphragm giving omni-directional response. The frequency response is linear except for a slight intentional rise at the high frequency end. This microphone is therefore, particularly suitable for capturing the over all effect of complex sound sources.

Printed in Germany

K M 5 4 a

The miniature microphone KM 54a is a pressure gradient transducer with acoustical phase shift. It is a directional microphone with cardioid response. Due to the small physical dimensions of the microphone capsule the directional properties are almost independent of frequency and a constant rear rejection ratio is maintained.

The linear frequency response makes the microphone suitable for recording very close to the sound source without fear of shrillness.

Owing to its directional properties the KM 54a is capable of rejecting unwanted noises from the back of a studio and is therefore suitable for making high quality recordings under unfavourable acoustic conditions. Another application is in high fidelity public address systems.

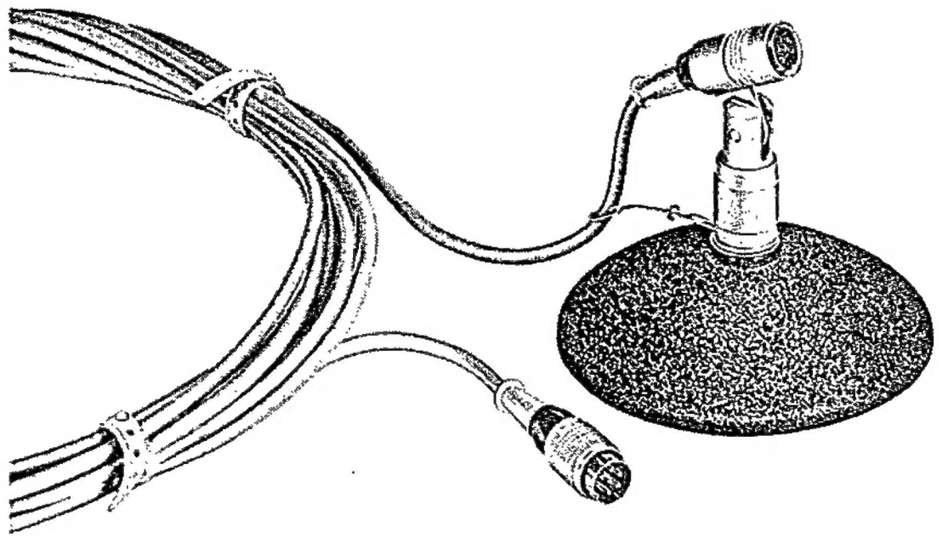
T E C H N I C A L D E T A I L S

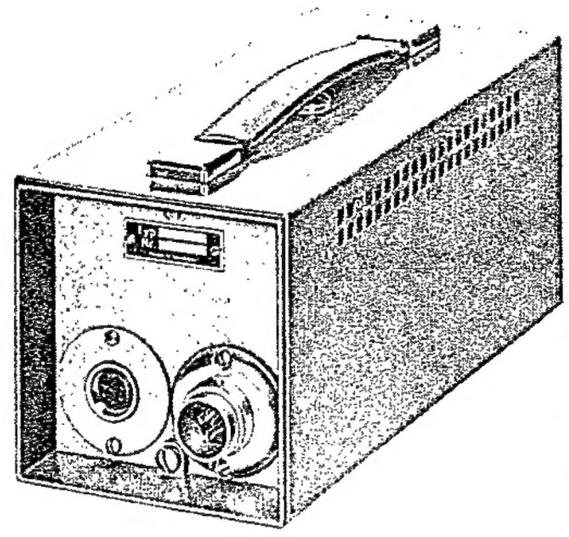
Both microphones consist of a head capsule and a complete preamplifier stage. The output transformer is astatically wound and, therefore, insensitive to hum fields. The amplifier output impedance is normally 200 ohms but it can be connected for 50 ohms if desired, resulting in a 6 db reduction in output voltage. Microphones connected for 50 ohms have a red dot beside the number plate.

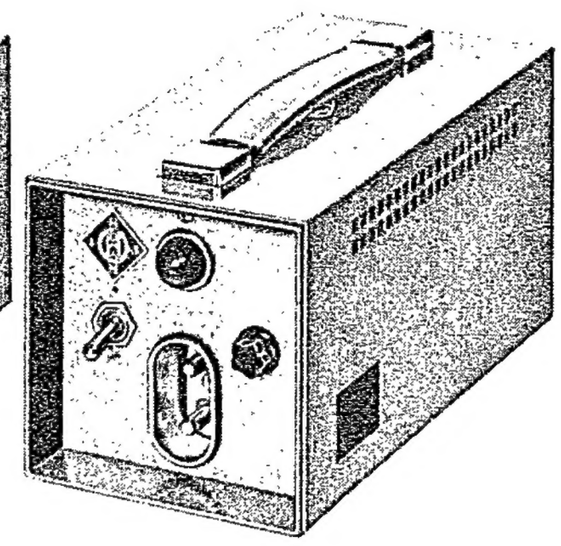
Both microphones have their diaphragms positioned in the capsule head in such a way as to give maximum sensitivity in the direction of the axis of the microphone; i.e. the microphones should be pointed towards the sound source.

To avoid overloading the preamplifier at very high sound levels an attenuator type Z 29 can be set between the capsule head and the amplifier section of either microphone KM 53a or KM 54a. By switching suitable fixed capacitors in parallel with the microphone capsule a two-element attenuator is formed which becomes effective before the valve. The three switch positions of the attenuator insert Z 29 give attenuations of 0 db, 6 db, and 12 db for the microphone KM 53a and 0 db 10 db and 18 db for the microphone KM 54a.

S T A N D A R D A C C E S S O R I E S







Power Supply Unit N K M a

The portable power supply unit NKMa is intended for supplying the proper voltages to one microphone type KM 53a or KM 54a from AC mains. The heater and plate voltages of this unit are stabilised. The audio output socket is a three pole connector (Tuchel T 3081). The appropriate line connector (T 3080) will be supplied upon request. The unit is fitted with a standard equipment type mains input socket.

Power Supply Unit N N 4 8 b

The power supply unit type NN 48b can be used instead of the unit type NKMa, the difference being that type NN 48b can also be used in conjunction with the large size microphones type M 49b and M 50b.

Battery supply B B 9 and B B 9 k

In the absence of mains these microphones can also be supplied from a battery supply type BB 9 or BB 9k. These battery units have the same dimensions and technical specification as the portable power supply unit NKMa. The unit BB 9 is suitable for supplying miniature microphones as well as the standard microphones M 49b and M 50b. The unit BB 9k is only suitable for miniature microphones.

Plug-In Power Supply Unit N 5 2 a

The power supply unit N 52a also has the same technical specifications as the unit NKMa, but it is constructed as a plug-in unit suitable for fitting into mixing consoles or racks. Up to ten of these units may be fitted, side by side, into one plug-in shelf type S 167 for rack mounting.

Microphone Interconnect Cables K C 1 and K C 2

The microphone is connected to the power supply unit by means of a cable, type KC 1 or KC 2. The cable KC 2 is fitted with a special six-pole screw-on connector for the microphone with a universal joint connecting stud for screwing onto stands having 1/2" or 5/8" 27 TPI threads. The cable type KC 1 has no fixing stud and is used, primarily as an extension cable or in conjunction with the elastic suspension type Z 38.

S P E C I A L A C C E S S O R I E S

MF 1	.....	Table stand with 1/2" screw stud
T 60	.....	Table tripod with universal joint
M 31c	.....	Floor tripod with flexible neck and microphone connecting cable
M 32	.....	Folding stand with 1/2" screw stud
Z 118	.....	Wind-whield
Z 38	.....	Elastic suspension
Z 29	.....	High intensity overload protektor
Z 53	.....	KM 53a test capacitance for calibrating purposes
Z 54	.....	KM 54a test capacitance for calibrating purposes
M 73k	.....	Test apparatus for testing microphone preamplifier and power supply unit
SG 5	.....	Universal coupling for interconnect cable KC 1 to stand

For further details about special accessories and adapters see our main catalogue.

T E C H N I C A L D A T A

Microphone KM 53a

Acoustical system	Pressure-transducer
Frequency range	40 ... 15 000 cps.
Output level	App. 1.2 mV/µb across 1000 Ω
Electrical load resistance	≥ 1000 (250) Ω
Source resistance	200 (50) Ω ± 20 %
Capacitance of microphone capsule	App. 83 pF
Stray voltage	≤ 14 µV
Noise voltage	≤ 7 µV measured according to DIN 5045 ≙ 18 DIN-phon
Distortion at 85 µb, corresponding to app. 100 mV at the cali - brating input	≤ . 3 %
Gain of microphone amplifier at 1000 cps.	0 db
Valves	1 x AC 701k (Telefunken)
Dimensions	Length 120 mm; diameter 21 mm
Weight	90 g

Microphone KM 54a

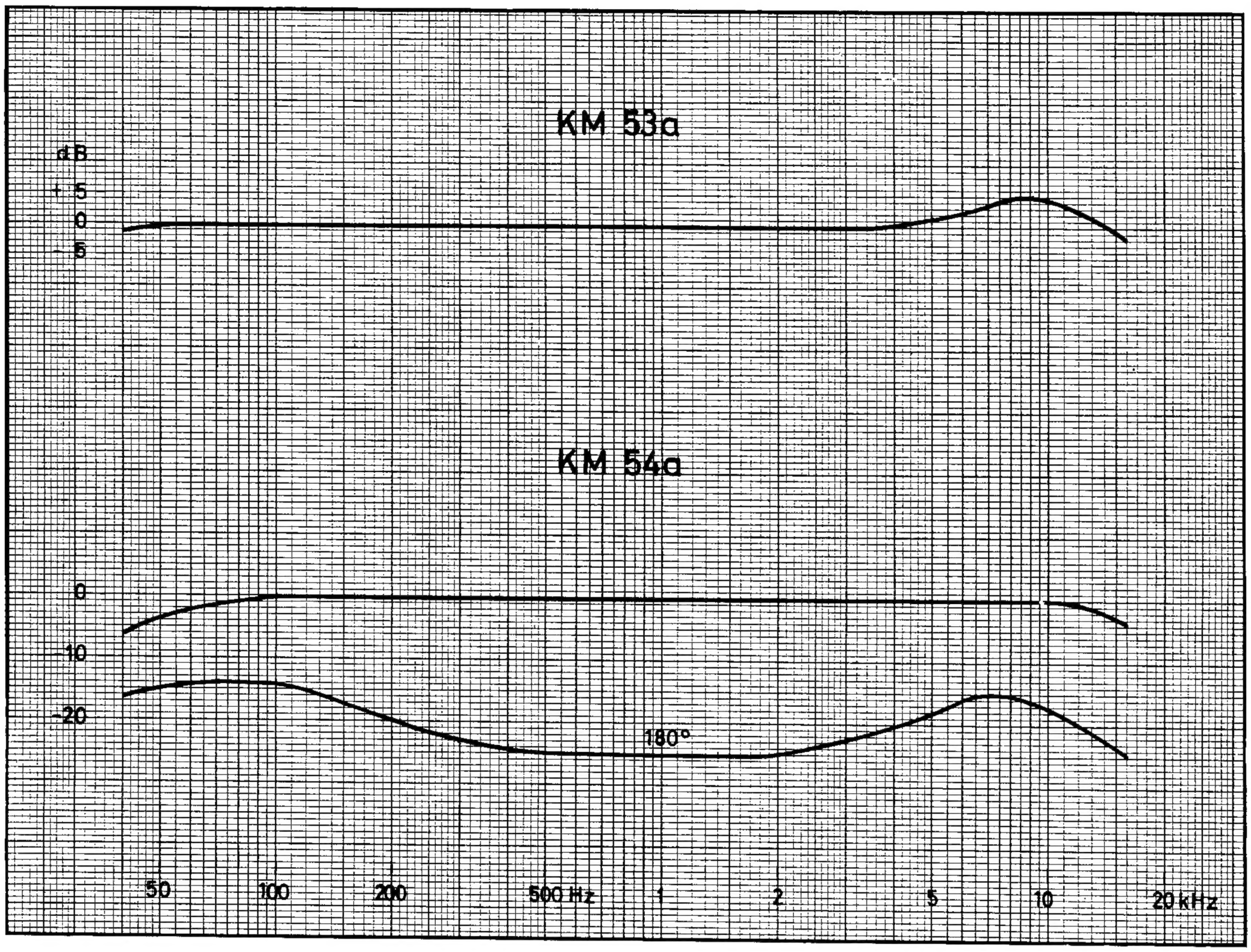
Acoustical system	Pressure gradient transducer
Frequency range	40 ... 15 000 cps.
Output level	App. 1 mV/µb across 1000 Ω
Electrical load resistance	≥ 1000 (250) Ω
Source resistance	200 (50) Ω ± 20 %
Capicitance of microphone capsule	App. 34 pF
Stray voltage	≤ 13 µV
Noise voltage	≤ 5 µV measured according to DIN 5045 ≙ 20 DIN-phon
Distortion at 80 µb, corresponding to app. 100 mV at calibrating input	≤ .3 %
Gain of microphone amplifier at 1000 cps.	- 2 db
Valves	1 x AC 701k (Telefunken)
Dimensions	Length 130 mm; diameter 21 mm
Weight	110 g

POWER SUPPLY UNIT TYPE N K M a

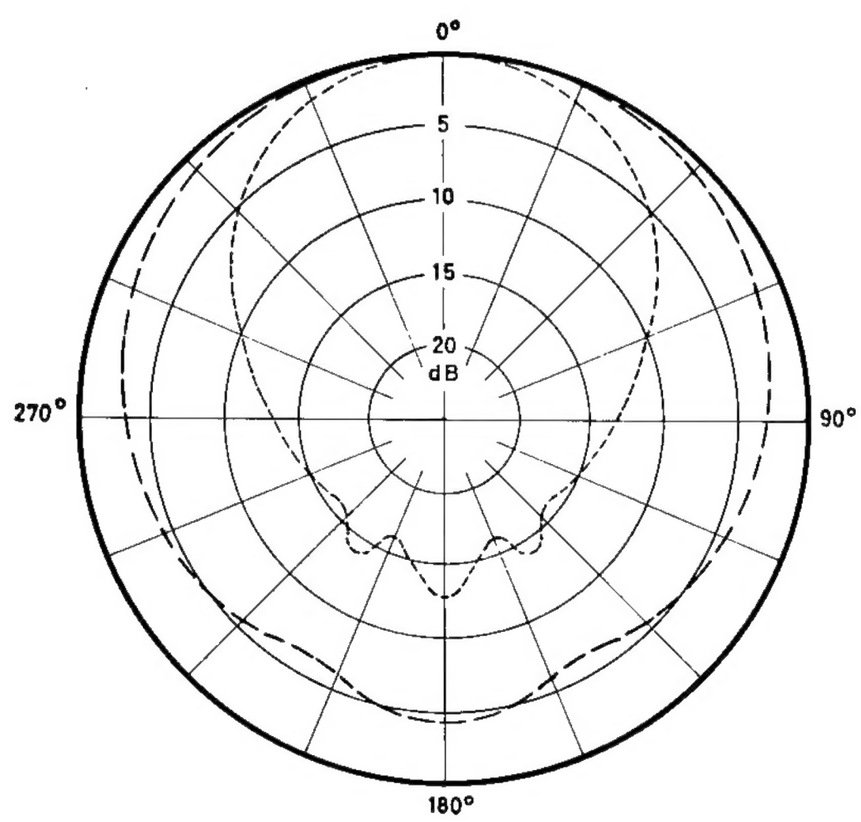
Mains voltage	110/127/220 Volts A.C. ± 10 %
Fuses	80 mA for 110/127 V or 50 mA for 220 V MT according to DIN 41571
Valves	1 Neon stabiliser 150 B 2 (Valvo)
Power consumption	App. 11 Watts
D.C. outputs	120 V (.5 mA); 4 V (100 mA)
Hum voltages	≤ 10 μV and ≤ 8 μV resp.
Neon pilot lamp	Rafi 110 V No. 2855
Dimensions	220 x 100 x 100 mm
Weight	2.2 kg

MICROPHONE INTERCONNECT CABLE K C 2

Standard length	10 m
Diameter	App. 5 mm
Weight	420 g
Connector	T 3400/1 (Tuchel)
Connector with universal coupling for screwing to stand	NT 3401 (Tuchel)
Thread	1/2" and 5/8" 27 TPI

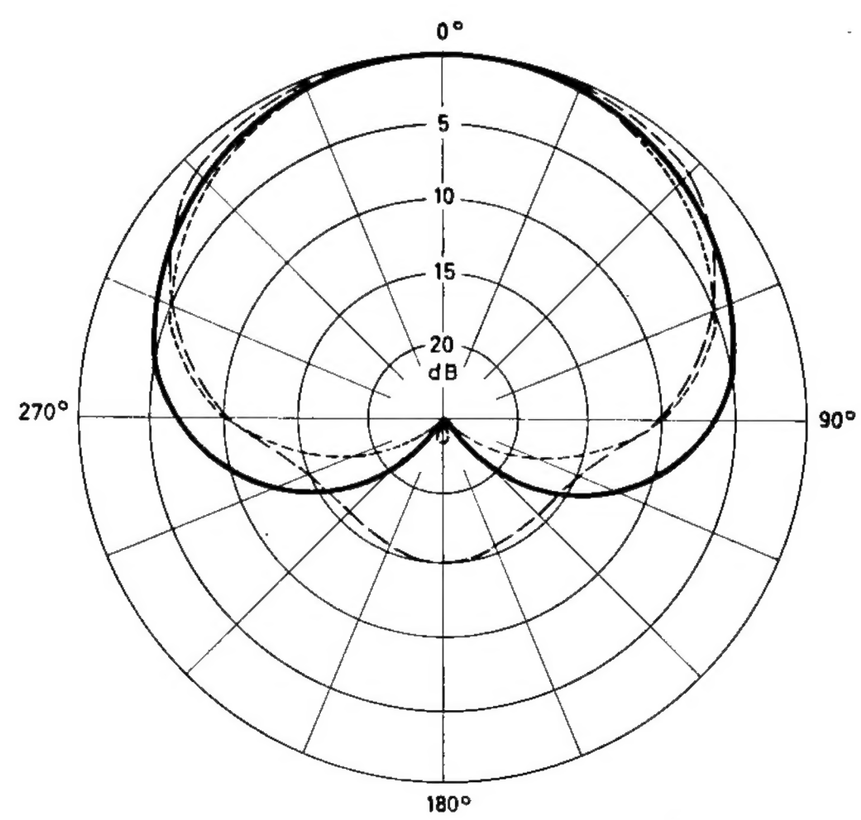


KM 53a



bis 1000 Hz
5000 Hz
15000 Hz

KM 54a



1000 Hz
100 Hz
15000 Hz